

ABSTRACT OF THE DISCLOSURE

The present invention is directed to an apparatus and method for efficiently calculating an intermediate value between a first end value and a second end value such that the area and time required to implement this operation is minimized. The present invention is also used to efficiently multiply a value by a fraction. A fraction is involved in calculating an intermediate value and also for multiplying by a fraction. When the denominator of the fraction is odd, the binary representation of the blending function, which is used to calculate an intermediate value, exhibits special characteristics. The special characteristics allow the present invention to, among others, avoid the use of multipliers, which require a large number of gates to implement. This invention exploits this and other special characteristics in order to efficiently implement in hardware the blending function and to efficiently multiply a value by a fraction.